

Mr. Giansante



Visual Basic

Mine Sweeper

August 2016

Mine Sweeper

Difficulty Level:

Beginner
Intermediate
Advanced

Help References:

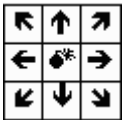
DataGridView Control
Random Numbers

Design a Visual Basic program that will create a playing field that can be used in the game Mine Sweeper.

The playing field should be a 12 x 12 grid. Your program should randomly place 30 bombs in the playing field.

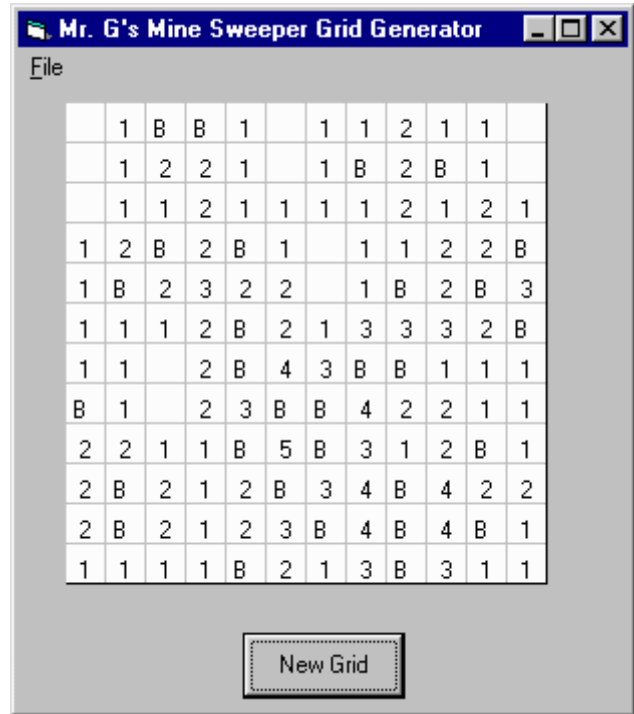
Each square in the grid should contain either:

- i. a bomb
- ii. a number (indicating the number of bombs adjacent to the square in question)
- iii. nothing (if there are no bombs in adjacent squares)



The following is an example of a playing field.

2	☛	2					1	1	1		
2	☛	2	1	1	2	1	1	1	☛	1	
1	1	1	1	☛	3	☛	1	1	1	2	1
1	1	1	1	2	☛	2	1			1	☛
1	☛	2	1	3	2	2				2	2
1	1	2	☛	3	☛	3	2	2	2	3	☛
1	1	2	1	4	☛	5	☛	☛	2	☛	☛
2	☛	2	1	3	☛	4	☛	3	2	2	2
☛	2	3	☛	4	2	3	2	2	2	1	1
1	2	3	☛	3	☛	1	1	☛	2	☛	2
1	2	☛	2	3	2	3	2	2	2	2	☛
1	☛	2	1	1	☛	2	☛	1		1	1



Your program should contain a Button control labeled "New Grid". Whenever this button is pressed, a new playing field should be generated and displayed.

The playing field should be displayed in a **DataGridView** Control.

Deluxe Mine Sweeper

Building on the program above, create a fully-functioning Mine Sweeper game.

To accomplish this, you will need to use a recursive function.

Mine Sweeper

Help for using the DataGridView Control

Using the Property Panel, set the following properties of the DataGridView control:

```
AllowUserToAddRows = False
AllowUserToDeleteRows = False
AllowUserToOrderColumns = False
AllowUserToResizeRows = False
AllowUserToResizeColumns = False

ColumnHeadersVisible = False
RowHeadersVisible = False
```

In Form | Load ...

```
DataGridView1.RowCount = 12
DataGridView1.ColumnCount = 12
```

To set the column width and row height ...

```
For i = 0 To 11
    DataGridView1.Rows(i).Height = 25
    DataGridView1.Columns(i).Width = 25
Next
```

Note: The first row is row 0 (not row 1)
The first column is column 0 (not column 1)

To clear the DataGridView of all contents ...

```
For r = 0 To 11
    For c = 0 to 11
        DataGridView1(r, c).Value = ""
    Next c
Next r
```

To put text in individual cells ...

To put in the first row, first column ...

```
DataGridView1(0, 0).Value = "B"
```

To put in the last row, last column ...

```
DataGridView1(11, 11).Value = "B"
```

Mine Sweeper

Please fill out all the information in this column using a pen before getting this assignment marked.

Name

Date

Class

Academic Honesty

The work I am submitting is completely my own creation and has not been copied from anyone else's work. If I have received help on this project, the names of those who have assisted are listed below.

Signature

Pre-Marking

The following people have pre-marked this assignment: (minimum of two)

Deductions

Each which is checked indicates the item was not satisfactory and results in the loss of one mark.

Deduction for late assignment is 1 mark per day.

Deduction for program crashing is 2 marks.

User Interface

- Appropriate Text in Title Bar (Form.Text)
- Separators and Access Keys in Menu, Capitalization
- "Exit" DialogBox meets requirements
- "About" DialogBox meets requirements
- Efficient and Esthetically-Pleasing User Interface
- Appropriate controls are used
- Spelling and Grammar are correct

Code / Programming Style

- Variables are declared and logically named
- Code is commented where appropriate
- Code is indented and spaced to show
- Code is efficient

Work Ethic / Problem Solving Skills

- Problem Solving Skills are demonstrated
- Makes Productive Use of Time
- Only Seeks Help when Necessary

Program-Specific Criteria

- New Games can be generated
- The right amount of bombs are inserted
- The numbers in adjacent squares are correct
- Squares which should not contain anything are left empty

Comments

Mark _____ / 10